

REMARKS

The above amendments and these remarks are responsive to the Office Action issued on October 20, 2005. By this response, claim 1 is amended. No new matter is added. Claims 2 and 7-16 were previously cancelled. Claims 1, 3-6 and 17 are now active for examination.

The Office Action rejected claims 1 and 3-6 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,511,155 to Yamaguchi in combination with U.S. Patent No. 5,223,886 to Ishida and U.S. Patent No. 5,093,716 to Kondo et al. Claim 17 stood rejected under 35 U.S.C. §103(a) as unpatentable over the combination of the Yamaguchi, Ishida and Kondo, and further in view of U.S. Patent No. 5,946,504 to Hirasawa et al.

It is submitted that the application is in condition for allowance in view of the amendments and/or remarks presented herein. Favorable reconsideration is respectfully solicited.

The Obviousness Rejection of Claims 1 and 3-6 Is Overcome

Claim 1, as amended, describes an image pickup apparatus including image pickup means for generating a plurality of screens having different exposure conditions. The plurality of screens are adjacent temporally and are synthesized to form a synthesized image. The image pickup apparatus further includes means for detecting the focal voltage of each of said plurality of screens. Focal voltage selecting means is provided for selectively outputting the focal voltage of one of the plurality of screens that is most suited to obtain a desired focus based on a predetermined selection criterion. Appropriate support for the amendment can be found in, for example, page 11, lines 20-28 of the written description.

It is submitted that various features described in claim 1 are not available in Yamaguchi, Ishida and Kondo, either combined or alone. For instance, Yamaguchi generates a plurality of

images of having different exposure conditions. Each of the exposure conditions sets a value for each of a diaphragm aperture, light quantity storage time and an amplifier gain. However, the plurality of images generated by Yamaguchi is limited in using different focal distances. No additional parameters are used. Accordingly, Yamaguchi does not specifically describe “generating a plurality of screens having different exposure conditions... wherein each of the exposure conditions sets a value for each of a diaphragm aperture, light quantity storage time and an amplifier gain,” as described in claim 1.

Furthermore, as correctly acknowledged by the Office Action, Yamaguchi fails to disclose means for detecting the focal voltage of each of said plurality of screens and storing said detected focal voltage of each respective screen, said focal voltage containing high-frequency components included in each of said plurality of screens; and focal voltage selecting means for selectively outputting the focal voltage of one of the plurality of screens that is most suited to obtain a desired focus based on a predetermined selection criterion, as described in claim 1.

The Office Action turned to Ishida intending to alleviate the deficiencies of Yamaguchi. However, like Yamaguchi, Ishida fails to disclose “generating a plurality of screens having different exposure conditions... wherein each of the exposure conditions sets a value for each of a diaphragm aperture, light quantity storage time and an amplifier gain,” as described in claim 1.

Moreover, an image pickup apparatus according to claim 1 includes means for detecting the focal voltage of each of said plurality of screens focal voltage, and selecting means for selectively outputting the focal voltage... that is most suited to obtain a desired focus based on a predetermined selection criterion. Accordingly, the selecting means of claim 1 selects and outputs a focal voltage, from among the plurality of screens, that is most suited to obtain a

desired focus. Automatic focusing is carried out according to the focal voltage selected from among the plurality of screens.

In contrast, although Ishida includes select means 404, that select means 404 is used to select an operation mode for the lens drive means, such that the camera can track a selected object even if the object is moving or a viewing condition has changed. The select means 404 of Ishida, however, does not perform a selection of a focal voltage from among the plurality of screens, that is most suited to obtain a desired focus, as described in claim 1.

Another cited patent, Kondo, was cited for its alleged disclosure of an auto focus detector 21 that is adapted to filter high frequency components from a video signal. Kondo, however, does not alleviate the deficiencies of Yamaguchi and Ishida.

Accordingly, Yamaguchi, Ishida and Kondo, even if combined, do not disclose “generating a plurality of screens having different exposure conditions... wherein each of the exposure conditions sets a value for each of a diaphragm aperture, light quantity storage time and an amplifier gain,” and “means for detecting the focal voltage of each of said plurality of screens and storing said detected focal voltage of each respective screen, said focal voltage containing high-frequency components included in each of said plurality of screens; and focal voltage selecting means for selectively outputting the focal voltage of one of the plurality of screens that is most suited to obtain a desired focus based on a predetermined selection criterion,” as described in claim 1. Thus, Yamaguchi, Ishida and Kondo cannot support a prima facie case of obviousness. The obviousness rejection of claim 1 is untenable and should be withdrawn. Favorable reconsideration of claim 1 is respectfully requested.

Claims 3-6 depend on claim 1 and incorporate every limitation thereof. Therefore, claims 3-6 also are patentable over Yamaguchi, Ishida and Kondo for at least the same reasons as for claim 1, by virtue of their dependencies on claim 1.

Additionally, claims 3-6 further describe features that are unavailable in either one of Yamaguchi, Ishida and Kondo, and thus are patentable also based on their own merits. For instance, claim 3 describes that during automatic focusing, the focal voltage selecting means continuously provides a focal voltage that is outputted at the time that the lens group is initially driven, for a period of time starting from the lens group are initially driven until a desired focus is reached, to thereby stop moving the lens group. As discussed earlier relative to claim 1, Ishida fails to disclose the means for selectively output a focal voltage that is most suited to obtain a desired focus. Instead, Ishida only sets an operation mode to track a selected object. Furthermore, Ishida stated that until an in-focus state is achieved, the lens drive control means operates in the mode in which focusing is made based on an average of three DFs. The purpose of such operation is to reach and maintain the “average” mode at the final stage of the focusing operation, not to continuously output a focal voltage, as described in claim 3.

Claim 4 describes that the focal voltage selecting means selectively outputs a focal voltage for focusing in accordance with magnitudes of said stored focal voltages inputted to the focal voltage selecting means. Claim 5 describes that the focal voltage selecting means selectively outputs a focal voltage for focusing on the basis of a comparison among luminance level frequency distributions associated with the obtained screens. Claim 6 describes that the focal voltage selecting means as recited in claim 1 varies the selection criterion in accordance with magnitudes of said stored focal voltages inputted to said focal voltage selecting means and

luminance level frequency distributions of the screens respectively associated with the focal voltages.

In rejecting claims 4-6, the Examiner asserts that Kondo “teaches that the luminance separator 32 operates by summing two digitized samples (read as magnitudes of luminance signal used to generate the focal voltages) produced by the A/D converter.” The Examiner appears to be asserting that luminance signals are equivalent to “focal voltages,” as described in the claims. However, it is submitted that a luminance signal is far from equivalent to focal signal. Further, the system in Kondo does not use the luminance signal in a way as described in claim 1 and claims 4-6 to achieve an automatic focusing function. Accordingly, claims 4-6 are patentable.

The Obviousness Rejection of Claim 17 Is Overcome

Claim 17 depends on claim 1 and further describes that the focal voltage selecting means is configured to perform a step to compare the focal voltage of each of the plurality of screens obtained under different exposure conditions, and update the focal voltage that is most suited to obtain the desired focus based on a result of the comparing step, and that the lens group drive means adjusts the focal point of said lens group based on the updated focal voltage that is most suited to obtain the desired focus.

As discussed earlier, claim 1, the features of which are incorporated into claim 17, is patentable over the combination of Yamaguchi, Ishida and Kondo. Another cited patent, Hirasawa, merely discusses improving the accuracy and speed when driving lens. Hirasawa, however, does not address comparing the focal voltage of each of the plurality of screens obtained under different exposure conditions, and updating the focal voltage that is most suited

to obtain the desired focus based on a result of the comparing step, as incorporated into claim 17 by its dependency from claim 1. Moreover, Hirasawa does not alleviate the deficiencies of Yamaguchi, Ishida and Kondo, as pointed out earlier. Accordingly, claim 17 is patentable over Yamaguchi, Ishida, Kondo and Hirasawa. Favorable reconsideration of claim 17 is respectfully requested.

CONCLUSIONS

For the reasons given above, Applicants believe that this application is conditioned for allowance and request that the Examiner give the application favorable reconsideration and permit it to issue as a patent. However, if the Examiner believes that the application can be put in even better condition for allowance, the Examiner is invited to contact Applicants' representatives listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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